



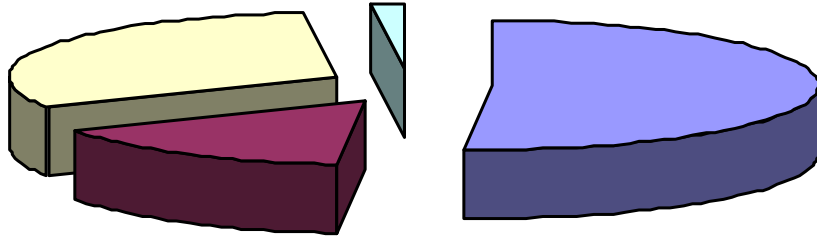
## **Advanced Materials for Military Ground Platforms**



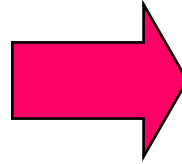
**TECHNOLOGY DRIVEN. WARFIGHTER FOCUSED.**

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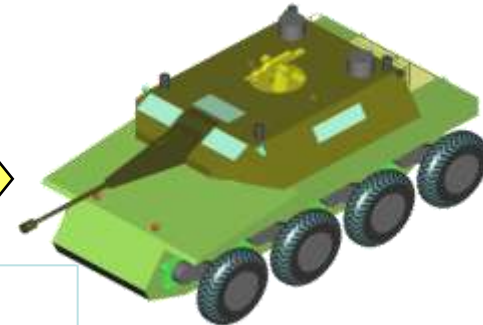
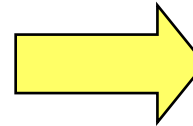
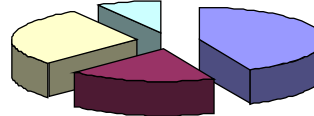
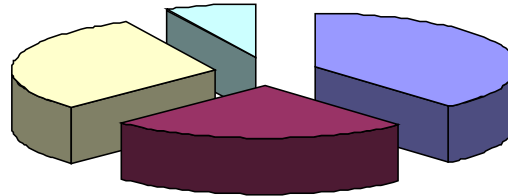


**70 ton vehicle--  
36 tons for structure &  
protection**



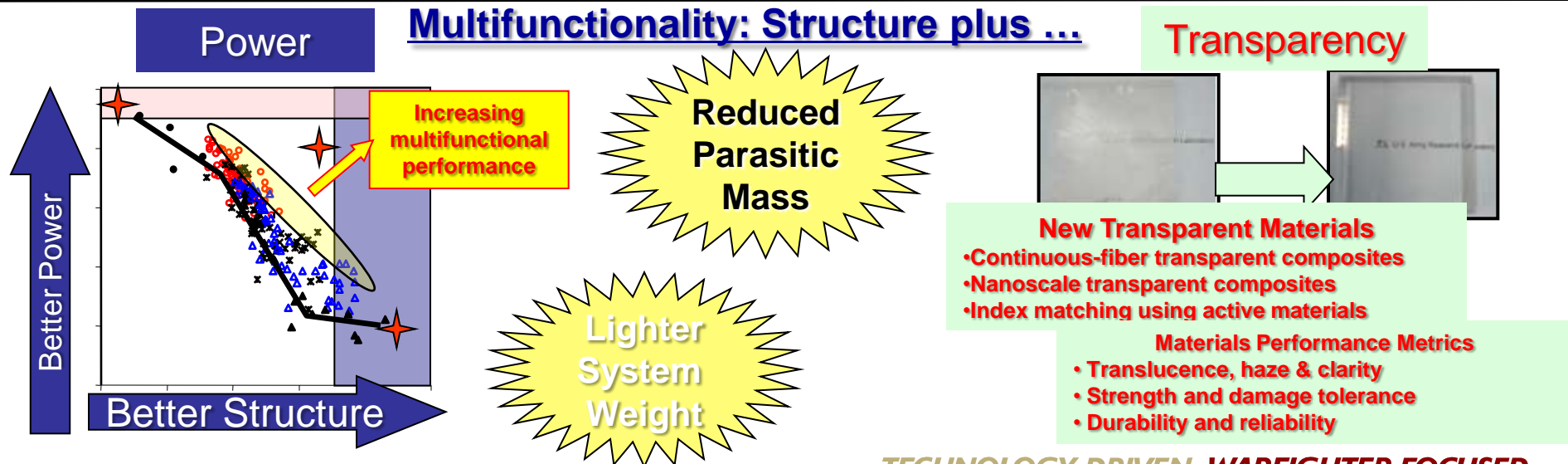
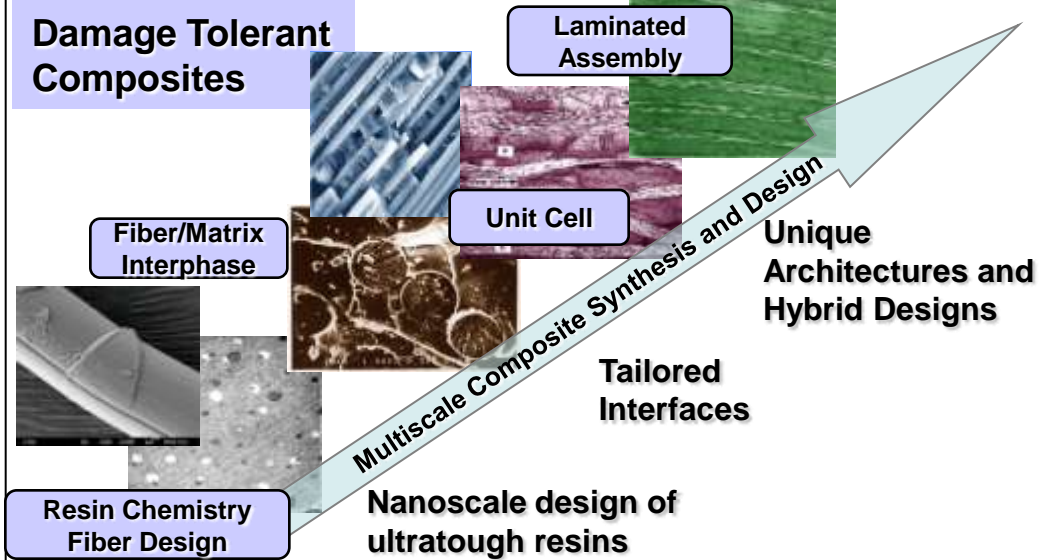
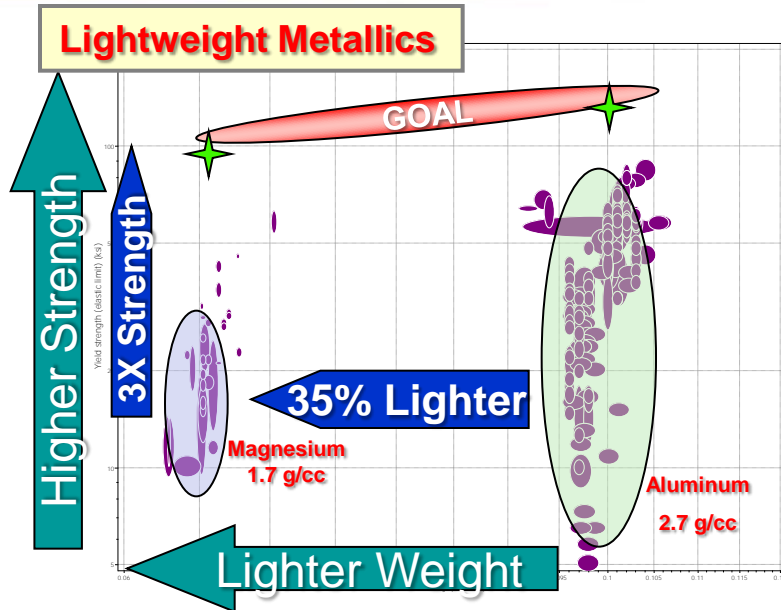
- Structure & Protection
- Lethality
- Mobility
- Other

**40 ton vehicle--  
15.5 tons for  
structure &  
protection**



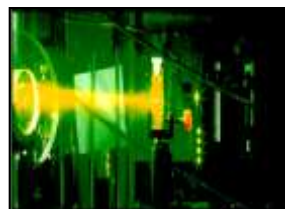
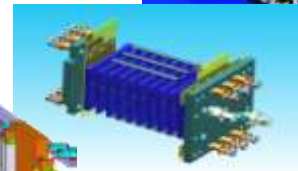
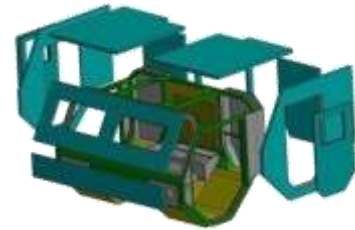
**20 ton vehicle—  
8.6 tons for structure & protection!**

**BUT ALSO NEED MORE POWER AND REDUCED THERMAL LOAD**





- advanced structural and propulsion systems
- power electronics and electric motors
- lightweight armor
- fire suppression
- optical limiters



TECHNOLOGY DRIVEN. **WARFIGHTER FOCUSED.**

- ultra high strength steels
- aluminum
- **titanium**
- **magnesium**
- Ni and Co superalloys (engine applications)
- PZTs
- metal matrix composites
- ceramic matrix composites
- polymer matrix composites
- **ultralight engineered materials** (e.g. foams, honeycomb, and sandwich materials)
- ultra high strength fibers
- resins and adhesives

- **Modeling of Composite Materials for Energy Absorption**
- **Nondestructive Evaluation Tools for Evaluation of Composite Structures**
- **Nondestructive Evaluation Techniques for On-Line Inspection of Structures**
- **Durability of Lightweight Composite Structures**
- **Composite Crash Energy Management**
- **Joining of Dissimilar Materials**
- **Adhesively-Bonded Composites**
- **Evaluation and Prediction of the Performance/Durability of Dissimilar Material Joints**